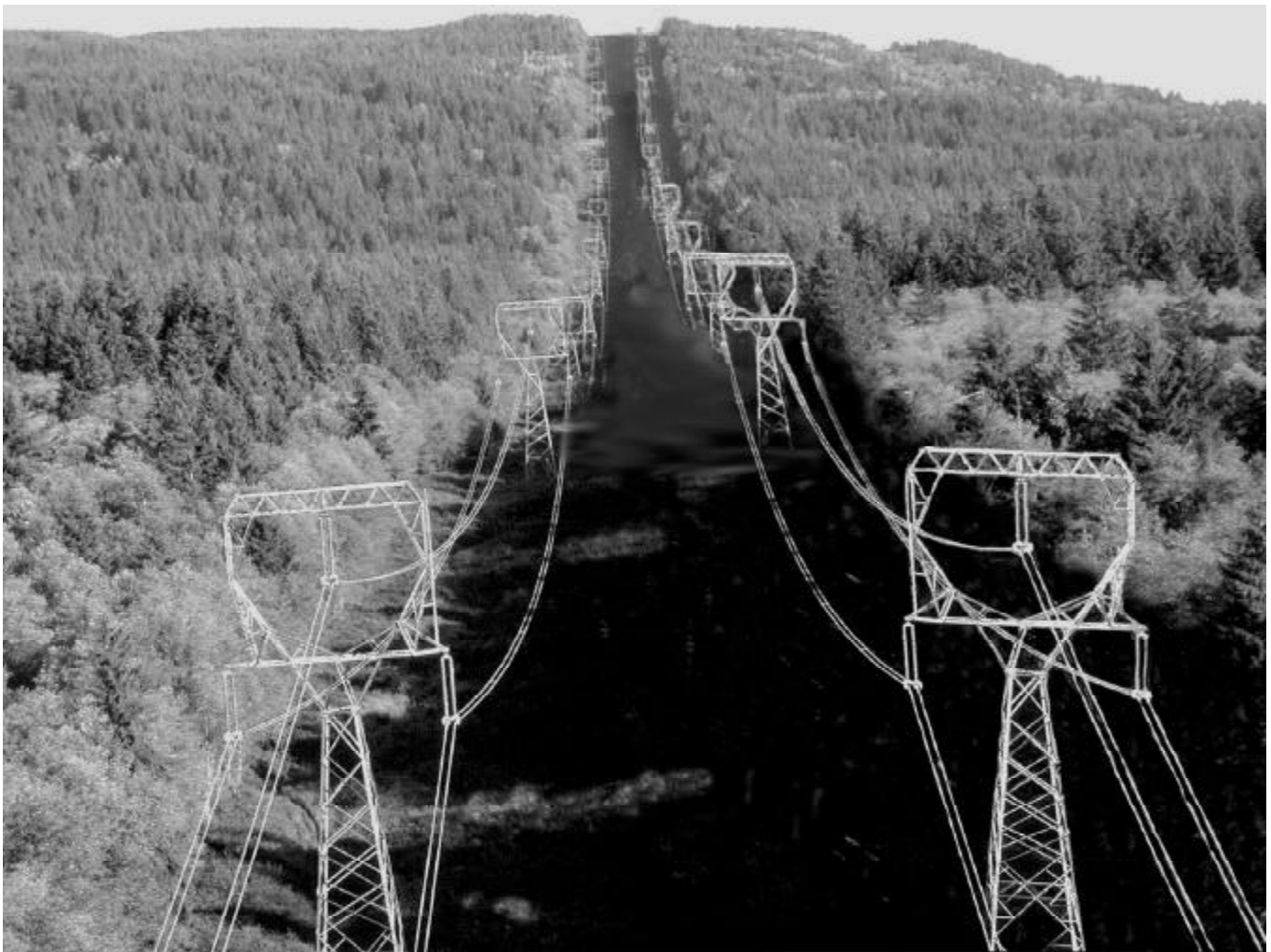


J U N E 2 0 0 3

# KANGLEY - ECHO LAKE TRANSMISSION LINE PROJECT

## FINAL ENVIRONMENTAL IMPACT STATEMENT - SUMMARY

DOE/EIS-0317-S1





# ***Kangley-Echo Lake Transmission Line Project***

***Final***

***Environmental Impact Statement***

***Summary***

(The complete Final Environmental Impact Statement is  
on the compact disc [CD] in the pocket inside the back cover.)

***Bonneville Power Administration***

***June 2003***



# ***Kangley-Echo Lake Transmission Line Project***

## ***Final Environmental Impact Statement***

**Responsible Agency:** U.S. Department of Energy, Bonneville Power Administration (BPA)

**Cooperating Agency:** U.S. Department of Agriculture, Forest Service (USFS)

**Title of Proposed Project:** Kangley-Echo Lake Transmission Line Project

**State Involved:** Washington

**Abstract:** BPA is proposing to build a new transmission line to accommodate increasing demand for electricity and ensure reliability in the Puget Sound area. The Proposed Action would construct a new line that would connect to an existing transmission line near the community of Kangley, and then connect with BPA's existing Echo Lake Substation. The major purpose of this proposal is to improve system reliability in the King County area. An outage on an existing line during times of heavy use, such as during a winter cold snap, could cause voltage instability and a loss of power in the King County area. System planners have projected total system load using normal growth in demand and determined that system instability could have developed as early as the winter of 2002-03.

Besides meeting this need for system reliability, this project would enhance the United States' delivery of power to Canada as required under the Columbia River Treaty of 1961.

BPA described and analyzed transmission route alternatives in a draft environmental impact statement (DEIS) released in June 2001 and additional transmission route alternatives and a non-transmission alternative in a supplemental draft environmental impact statement (SDEIS) released in January 2003 (the SDEIS incorporated the original DEIS and new information developed for the SDEIS). The Proposed Action and Alternatives 2, 3, 4A and 4B cross the Cedar River Municipal Watershed. Alternatives A and C are located to the west of the Cedar River Municipal Watershed boundary. Alternatives B and D are also outside the Cedar River Municipal Watershed and cross the Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests. Under all transmission alternatives, Echo Lake Substation would be expanded about three acres to the east and new equipment to accommodate the new line would be installed. The non-transmission alternative considered several non-transmission measures to defer the need for a transmission line. BPA also analyzed a No Action Alternative.

This abbreviated final environmental impact statement (FEIS) contains the changes made to the SDEIS, comments received on the DEIS and the SDEIS, and BPA's written responses to the comments. The FEIS should be used as a companion to the SDEIS, which contains the full text of the affected environment, environmental analysis and appendices.

BPA expects to issue a Record of Decision on the proposed project in August 2003.

For additional information, contact:

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For more copies of this document, please call 1-800-622-4520 and ask for the document by name. The abbreviated FEIS and the SDEIS Summary are also available on the Internet at: [www.efw.bpa.gov](http://www.efw.bpa.gov).

For additional information on DOE National Environmental Policy Act activities, please contact Carol Borgstrom, Director, Office of NEPA Policy and Compliance, EH-42, U. S. Department of Energy, 1000 Independence Avenue S.W., Washington D.C. 20585, phone: 1-800-472-2756.



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The following files are available on the compact disc (CD) in the pocket inside the back cover.

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## *Chapter 1 — Summary*

This is the final environmental impact statement (FEIS) for Bonneville Power Administration's (BPA) proposed Kangley-Echo Lake 500-kV Transmission Line Project. This document has been prepared as an "abbreviated" FEIS pursuant to the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) regulations because there have been no substantial changes to the proposed action, alternatives, or environmental analysis presented in the Supplemental Draft EIS (SDEIS) (dated January 2003), which incorporated the original Draft EIS (DEIS), for this project. Consistent with 40 C.F.R. 1503.4(c), this abbreviated FEIS provides comments received on the DEIS and the SDEIS, agency responses to these comments, and any changes made to the SDEIS. This FEIS should be used as a companion document to the SDEIS, which contains the full text of the affected environment, environmental analyses, and appendices. For readers of this FEIS who do not already have a copy of the SDEIS, copies may be obtained by:

- Calling BPA's document request line at 1-800-622-4520; record your name, address, and which documents you would like, or
- Accessing a Summary of the SDEIS on BPA's Web site at <http://www.bpa.gov/>; look for environmental analysis, Active Projects, or
- Writing to Bonneville Power Administration  
Public Information Office – CGIL-1  
P. O. Box 12999  
Portland, Oregon 97212

The remainder of this summary provides an overview of the proposed action and alternatives, the lead and cooperating agencies, the comment period for the DEIS and SDEIS, and changes to the SDEIS. Chapter 2 presents comments (copies of letters, e-mails, comment forms, and public meeting comments) on the DEIS and agency responses to these comments. Chapter 3 presents comments (copies of letters, e-mails, comment forms and meeting transcripts) received on the SDEIS and agency responses to these comments.

## ***Summary of the Proposed Action***

BPA proposes to build a single-circuit 500-kV transmission line from a tap point on an existing 500-kV line near Kangley, Washington, to its Echo Lake Substation near North Bend, Washington (see Map 1). The proposed route for this line, also called Alternative 1, is about nine miles long. About five miles of the proposed route would go through the Cedar River Municipal Watershed. In addition, Echo Lake Substation would be expanded about three acres to the east and new equipment would be installed there to accommodate the new line (common to all transmission alternatives).

This alternative was proposed because it would be located immediately parallel to an existing BPA existing 500-kV transmission line, the Raver-Echo Lake Transmission Line. Locating a new line next to an existing one reduces right-of-way (ROW) clearing needed for the new line and reduces the need for additional access roads. Lattice steel transmission towers would support the 500-kV transmission line. These structures average 135 feet high, with the average span between towers of about 1,150 feet.

## ***Summary of Alternatives***

### ***Alternative 2***

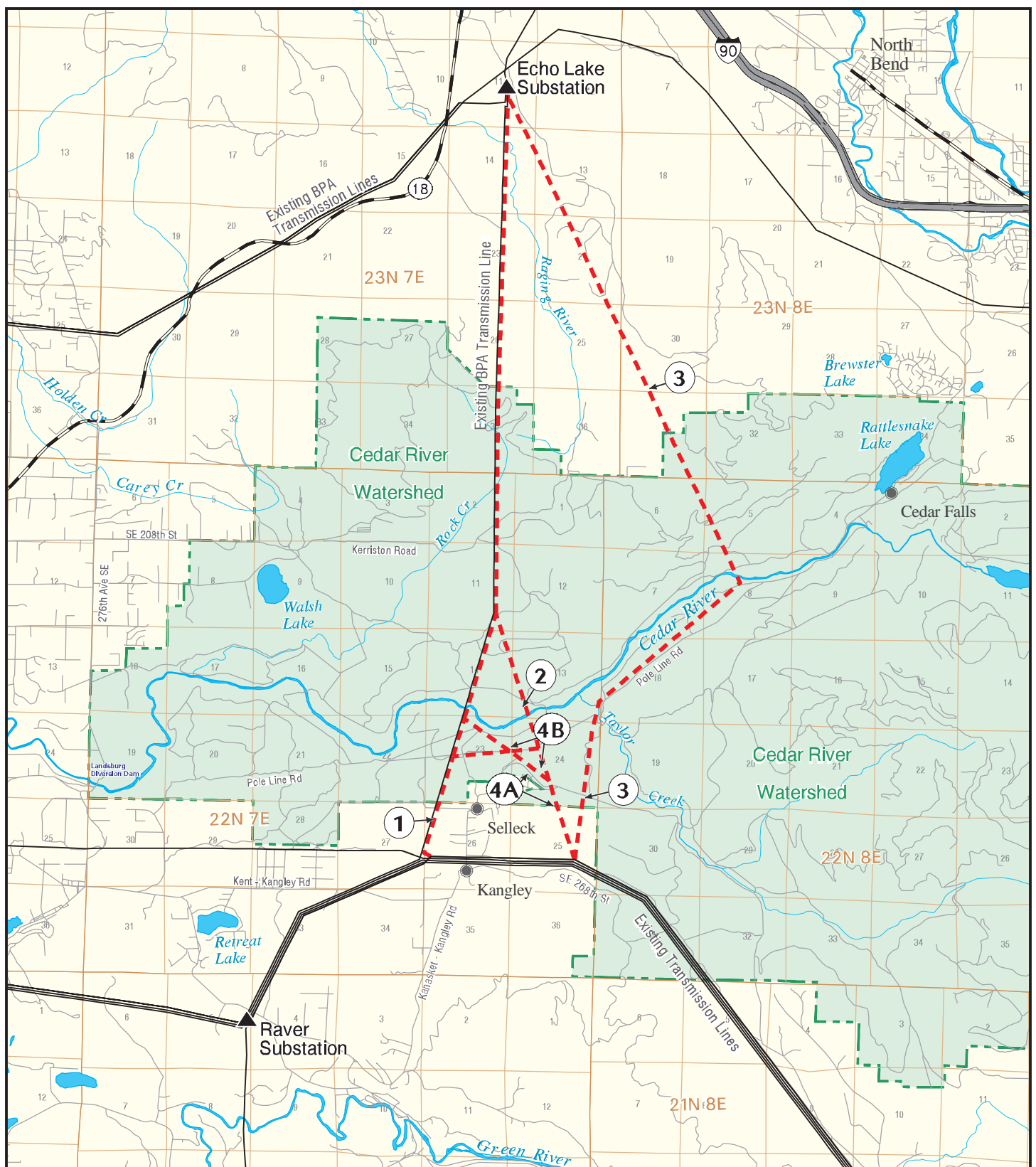
Alternative 2 would originate from a tap point about 1.5 miles east of the tap point for the Proposed Action and traverse northwest about three miles before continuing north paralleling the existing Raver-Echo Lake Transmission Line into Echo Lake Substation. (See Map 1.) This alternative would be approximately nine miles long.

### ***Alternative 3***

Alternative 3 would begin at the same tap point as Alternative 2. From this point, it would traverse northeasterly then turn north-northwesterly to Echo Lake Substation. This alternative would be about 10.2 miles long. (See Map 1.)

### ***Alternative 4A***

Alternative 4A would begin at the same tap point as Alternative 2. About one-third of the way along Alternative 2, this alternative turns northwest to connect with the Proposed Action. This alternative would be about 9.5 miles long. (See Map 1.)

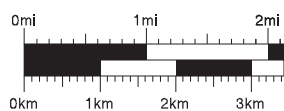


## PROPOSED ACTION and ALTERNATIVES on the CEDAR RIVER WATERSHED

Map 1



May 09, 2003



- Existing Transmission Lines
- Proposed Transmission Line Alternatives Under Consideration
- BPA Substation
- Alternative





***Alternative 4B***

Alternative 4B would begin at the same tap point as Alternative 2. About half way along Alternative 2, this alternative would traverse southwest to connect with the Proposed Action. This alternative would be about 9.2 miles long. (See Map 1.)

***Alternative A***

Alternative A would require construction of about 20 miles of new 500-kV transmission line on mostly rural residential land, on mostly existing ROW. The alternative would use a vacant ROW between the tap point along the existing transmission line near Kangley, to a point near Covington Substation, immediately north of a portion of an existing 230-kV transmission line. Some new ROW would need to be acquired around the northeast side of Covington Substation to connect two transmission line ROWs. (See Map 2.)

BPA is considering an option for a portion of this alternative that would impact fewer homes. This option would run through Covington Substation on mostly BPA-owned land.

The existing single-circuit 230-kV line from Covington Substation to the north to a tap point on an existing double-circuit 500-kV transmission line would need to be torn down and replaced with a new double-circuit transmission line. This new transmission line would have a 230-kV line on one side and a 500-kV line on the other. The 500-kV circuit would tap an existing vacant 500-kV circuit on the existing double-circuit 500-kV line coming from the west to take the power into Echo Lake Substation.

***Alternative B***

For this alternative, 35.6 miles of the existing 345-kV single-circuit transmission line and towers between Stampede Pass and Echo Lake Substation would be torn down and new double-circuit towers erected to accommodate two new 500-kV lines. Using the same design as the Proposed Action, Alternative B would tap an existing 500-kV line just east of Stampede Pass and divert power to Echo Lake Substation. The new double-circuit line would operate on one side at 345-kV (like the existing line) and the other at 500-kV. This alternative crosses the Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests. (See Map 2.)

### ***Alternative C***

Alternative C has two options, Option C1 and Option C2. Option C1 is approximately 10.1 miles long and Option C2 is approximately 10.6 miles long. (See Map 2.) Both would require new ROW away from existing transmission lines. Option C1 would begin at Raver Substation and proceed 2.5 miles west immediately north of and parallel to an existing double-circuit 500-kV transmission line on new 150-foot-wide ROW, before turning north and traveling about 7.6 miles on new 150-foot ROW through the rural residential areas of Ravensdale and Hobart. The proposed line would then tap the vacant circuit on an existing double-circuit 500-kV transmission line, west of Echo Lake Substation, just north of State Route 18. Power would be carried by this existing transmission line into Echo Lake Substation, following the completion of a short segment at Echo Lake Substation similar to that described at the north end of Alternative A.

Option C2 would begin at a tap point on an existing 500-kV double-circuit transmission line near Kangley, about 2.8 miles northeast of Raver Substation, and traverse about 4.5 miles west within a vacant transmission line ROW immediately north of a 230-kV transmission line, before turning north and continuing on the same alignment as Option C1 into Echo Lake Substation.

### ***Alternative D***

Alternative D would tap an existing 500-kV line just east of Stampede Pass and divert power to Echo Lake Substation over 35.6 miles of new single-circuit 500-kV transmission line. (See Map 2.)

Alternative D has two options, Option D1 and Option D2. Option D1 is located immediately adjacent to and south of the existing 345-kV line; Option D2 is located immediately adjacent to and north of this line. Either option would entail acquiring and clearing a new 150-foot wide ROW and building a new 500-kV single-circuit transmission line. Both options cross the Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests.

### ***Non-Transmission Alternative***

For this alternative, BPA would use a broad range of alternatives including Demand-Side Management, Distributed Generation, large scale Generation, and Demand Response and Direct Load Control that might defer the need for a new 500-kV transmission line.

### ***No Action Alternative***

No new line would be built.



Map 2

ADDITIONAL ALTERNATIVES  
CONSIDERED

Legend



Existing BPA Transmission Lines



Proposed Transmission Line Alternatives Under Consideration



BPA Substations

Alternatives

A



Construct New Single-Circuit 500-kV Line from tap near Kangley to Covington Substation. Rebuild portion of Covington - Maple Valley 230-kV to Double-Circuit 500-kV.

B



Rebuild Portion of Rocky Reach-Maple Valley 345-kV to Double-Circuit 500-kV from East of Stampede Pass to Echo Lake Substation.

C

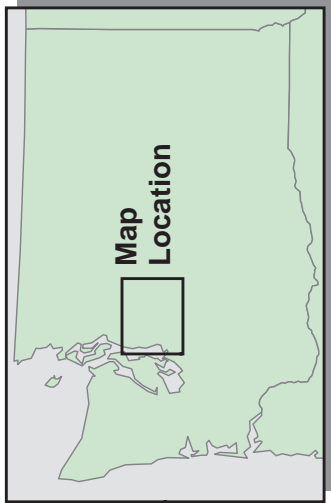


Construct New Single-Circuit 500-kV Line West of the Cedar River Watershed to the Echo Lake - Maple Valley Lines.

D

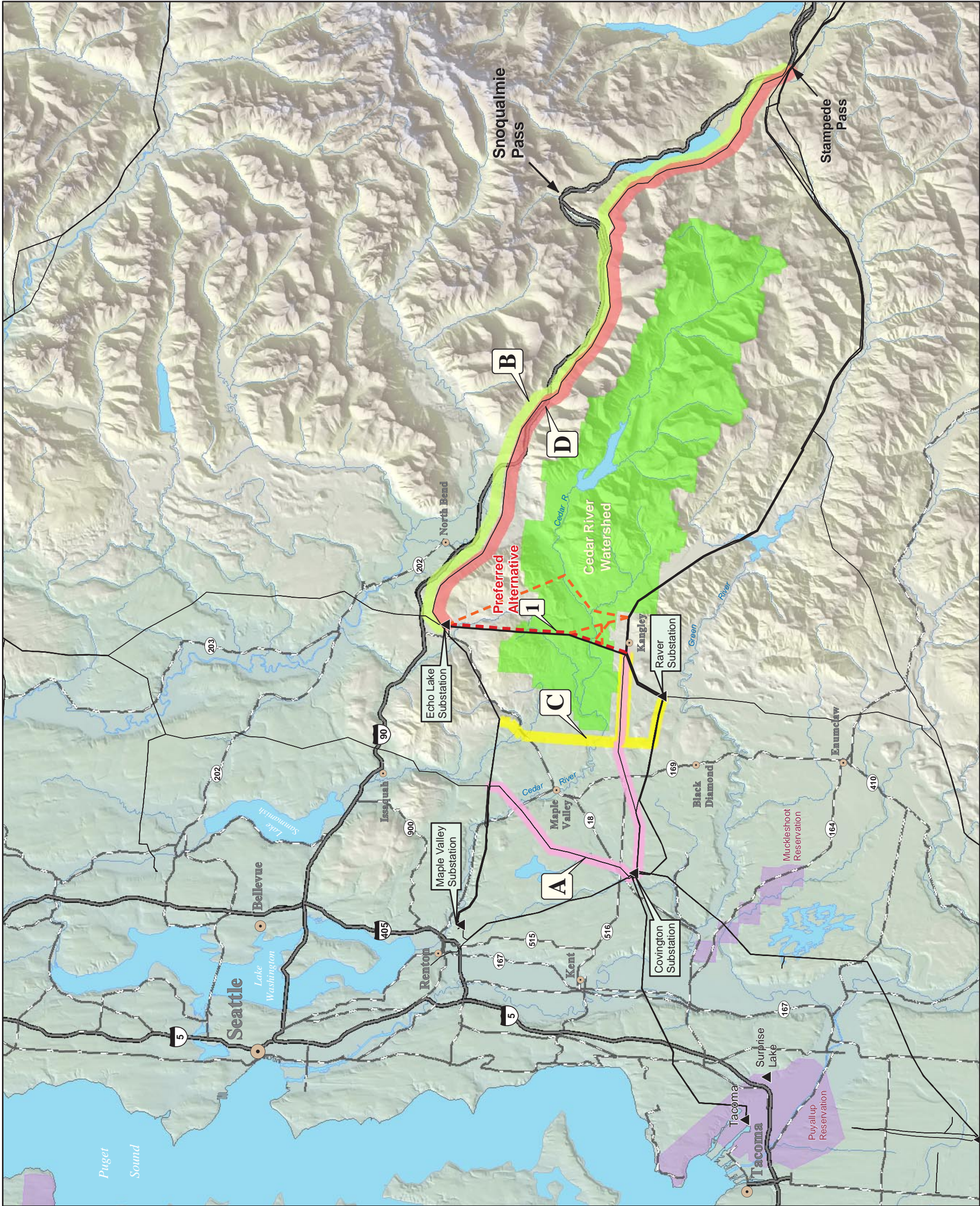


Construct New Single-Circuit 500-kV Line from East of Stampede Pass Adjacent to Rocky Reach-Maple Valley Line.



Miles

May, 2003









## ***Lead and Cooperating Agencies***

BPA is the lead federal agency on this project and supervises the preparation of the EIS. Alternatives B and D would cross land managed by the U.S. Forest Service (Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests). The USFS has agreed to cooperate in the EIS process.

## ***Draft and Supplemental EIS Comments***

The Draft EIS was distributed to agencies, tribes, groups, individuals and libraries in June 2001. A 45-day public review period was extended until September 4, 2001 based on requests for more time to review and comment on the document. A public meeting was held on August 1, 2001 in Maple Valley, Washington to accept public comment on the draft document. During the comment period BPA received over 700 comments. Issues raised in the comments included the following: the need for the project; alternatives considered; impacts to the Cedar River Municipal Watershed and water quality; fish and wildlife; cultural resources; and other subjects. Copies of comments made on the DEIS and BPA's responses to those comments are in Chapter 2.

After reviewing the comments and refining the cost estimates associated with BPA's preferred alternative, BPA decided to prepare a SDEIS that re-evaluated four route alternatives not analyzed in detail in the DEIS. BPA also initiated a study of non-transmission line alternatives to consider.

BPA completed the SDEIS in January 2003 and released it for a 45-day comment period.

BPA hosted four public meetings during the comment period: Monday, February 3, in North Bend; Tuesday, February 4, in Seattle; Wednesday, February 5, in Maple Valley; and Thursday, February 6, in Covington. An additional meeting explaining BPA's study of a Non-Transmission Alternative for the SDEIS was held in Seattle on February 4. During the public meetings, attendees were invited to interact with BPA staff, ask questions and give comments; comments were recorded at the meetings. About 150 people attended the public meetings for the SDEIS.

BPA received over 250 comments during this comment period. Issues raised in the comments included the following: the need for the project; the alternatives considered and their costs; proposed and suggested mitigation; impacts to the Cedar River Municipal Watershed and water quality; fish and wildlife; cultural resources; impacts to

property values; and other subjects. Copies of comments made on the SDEIS and BPA's responses to those comments are in Chapter 3.

### ***Changes to the Supplemental Draft EIS***

There are no major changes to the SDEIS that was released in January 2003. The following are additions or corrections made to the SDEIS.

In the SDEIS, BPA proposed restricting ground-disturbing activities to the dry season (May through September). Construction for this project is anticipated to begin in early to mid-August 2003. Under a compressed project schedule designed to allow for transmission line energization by December 31, 2003, initial construction activities would focus on critical areas in the Cedar River Watershed. First consideration would be given to areas next to the Cedar River crossing, Rock Creek and Brew Hill. Infrastructure items constructed first would include the following: road upgrading, road building, access road removal from service, cross drain and approach culvert installation, logging activities, tower footing excavation/borings and installation, counterpoise excavation/grounding well boring and installation, tensioning/reel site establishment, and site stabilization.

After September 30, construction activities would continue in the CRW spreading focus to areas outside of the CRW, and would operate under the more stringent wet season construction requirements. Final project stabilization and restoration is not anticipated until late summer 2004, possibly longer depending on vegetation success.

At the time the SDEIS was released, BPA had not gained permission to cross the Cedar River by helicopter with any logs removed for construction. The City of Seattle has granted permission to fly over the Cedar River with logs as long as there is monitoring.

The SDEIS stated that no new bridges would be needed for this project. One temporary bridge crossing, running from upland bank to upland bank, may be needed for construction. The bridge would be removed after construction.

Addition to Appendix A, Final Fisheries Technical Report includes corrected information about streams potentially affected by Alternatives 1–4.

Appendix D, Final Wetlands Technical Report, has been changed to state that no wetlands would be filled.

In Appendix E, Table 4, the description of the width of the right-of-way was incorrect. The correct width is 150 feet.

The Appendix F included in the SDEIS was not the correct document. The correct document is now available.

There is an addition to Appendix U. The addition is a recent letter from the National Marine Fisheries Service.

Appendix Y, Drinking Water Regulations, has been added. This appendix includes reports from Shannon and Wilson, Inc. to BPA concerning impacts to drinking water supplies in the project area.

Updated information about electromagnetic fields developed for another BPA transmission project has been added (see Appendix Z).

Appendix AA has been added. This appendix includes a recent letter from the U. S. Fish and Wildlife Service.

Map 9 has been corrected to indicate property that is owned by BPA.


















## Map 9

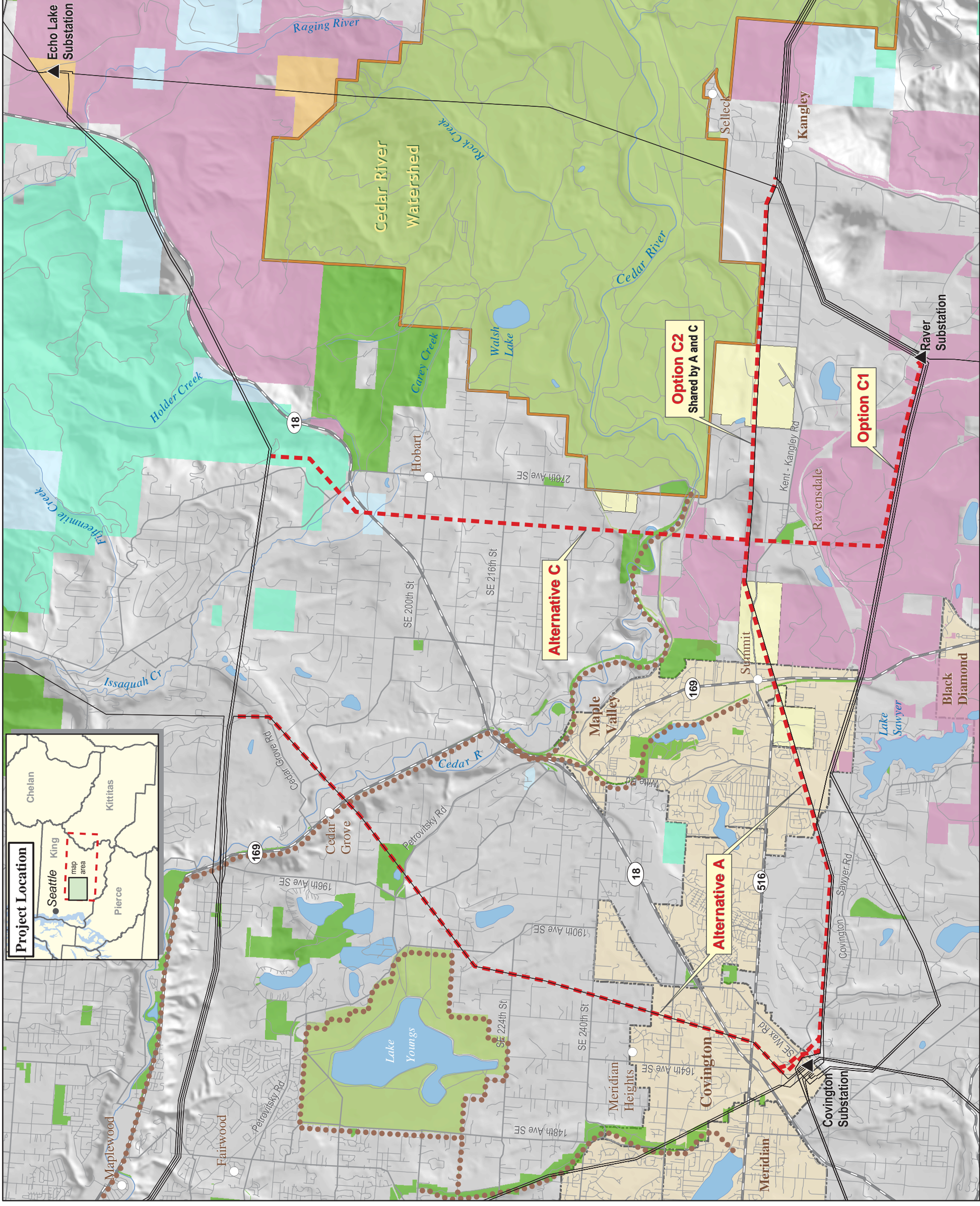
# RECREATION and OWNERSHIP

## Alternatives A and C

## Legend

- |   |   |
|---|---|
|    | Proposed Transmission Line Alternatives |
|    | Existing BPA Transmission Lines         |
|    | Existing BPA Substation                 |
|    | WA Dept. of Natural Resources           |
|    | State Park or Recreation Area           |
|    | Other State Lands                       |
|    | Bonneville Power Administration         |
|   | City                                    |
|  | Other Public - City or County           |
|  | Private Timber or Other Private Land    |
|  | Other Private or Unspecified            |
|  | Cedar River Watershed Boundary          |
|  | Trail                                   |

Source: Washington DNR, King County GIS, 2000.

Miles  
April, 2003





**Bonneville Power Administration**

PO Box 3621 Portland, Oregon 97208-3621

DOE/BP-3433 JUNE 2003 370

